

Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-18 (canceled).

19 (new): A rechargeable lithium ion battery, comprising:

(a) a positive electrode comprising:

a collecting electrode; and

an active material layer formed on the collecting electrode,

the active material layer containing particles of a positive electrode active material within a prescribed particle size range,

the active material layer having a layer thickness within a prescribed layer thickness range,

the active material layer having a local porosity thereof changed along a direction of the layer thickness;

(b) a negative electrode; and

(c) a non-aqueous electrolytic solution.

20 (new): The rechargeable lithium ion battery as claimed in claim 19, wherein the active material layer has the local porosity changed stepwise.

21 (new): The rechargeable lithium ion battery as claimed in claim 20, wherein the active material layer comprises a plurality of coated active material layers having porosities thereof changed from each other.

22 (new): The rechargeable lithium ion battery as claimed in claim 19, wherein the active material layer comprises:

a first active material layer formed with a first porosity; and
a second active material layer formed with a second porosity changed from the first porosity.

23 (new): The rechargeable lithium ion battery as claimed in claim 22, wherein the first active material layer is closer to the collecting electrode than the second active material layer, and the first porosity is lower than the second porosity.

24 (new): The rechargeable lithium ion battery as claimed in claim 23, wherein the first active material layer comprises particles of the positive electrode active material having a first average particle size, and
the second active material layer comprises particles of the positive electrode active material having a second average particle size identical to the first average particle size.

25 (new): The rechargeable lithium ion battery as claimed in claim 23, wherein the first active material layer comprises particles of the positive electrode active material having a first average particle size, and
the second active material layer comprises particles of the positive electrode active material having a second average particle size different from the first average particle size.

26 (new): The rechargeable lithium ion battery as claimed in claim 19, wherein the active material layer has an average porosity thereof adjusted within a prescribed average porosity range.

27 (new): The rechargeable lithium ion battery as claimed in claim 26, wherein the prescribed average porosity range is set within a range of 50% or more.

28 (new): The rechargeable lithium ion battery as claimed in claim 27, wherein the prescribed average porosity range is set within a range of 50% to 60%.

29 (new): The rechargeable lithium ion battery as claimed in claim 27, wherein the prescribed particle size range is set within a range of 5 µm or less in terms of an average particle diameter.

30 (new): The rechargeable lithium ion battery as claimed in claim 29, wherein the prescribed layer thickness range is set within a range of 20 µm to 80 µm.

31 (new): The rechargeable lithium ion battery as claimed in claim 30, wherein the prescribed layer thickness range is set within a range of 20 – 30 µm.

32 (new): The rechargeable lithium ion battery as claimed in claim 30, wherein the active material layer comprises:

a first active material layer formed with a first thickness on the collecting electrode; and
a second active material layer formed with a second thickness on the first active material layer,

the first and second thicknesses are each set within a range of 20 µm to 30 µm,
the first active material layer has a porosity thereof with a range of 30% to 50%, and
the second active material layer has a porosity thereof within a range of 50% to 60%.

33 (new): The rechargeable lithium ion battery as claimed in claim 19, wherein the positive electrode active material comprises lithium manganese oxide.

34 (new): The rechargeable lithium ion battery as claimed in claim 19, wherein the non-aqueous electrolytic solution contains a concentration of electrolyte within a range of 1.0 mol/l to 3.0 mol/l.

35 (new): The rechargeable lithium ion battery as claimed in claim 34, wherein the concentration of electrolyte is set within a range of 1.5 mol/l to 2.5 mol/l.

36 (new): The rechargeable lithium ion battery as claimed in claim 19, wherein the non-aqueous electrolytic solution contains an electrolyte comprising one of LiPF₆ and LiBF₄.

37 (new): The rechargeable lithium ion battery as claimed in claim 25, wherein the first and second active material layers have a thickness thereof within a range of 20 µm to 30 µm.

38 (new): The rechargeable lithium ion battery as claimed in claim 37, wherein the second active material layer is formed on the first active material layer, the first average particle size is set within a range of 0.1 µm to 5 µm, and the second active average particle size is set within a range of 5 µm to 20 µm.

39 (new): A rechargeable lithium ion battery which is capable of being used as an energy source for a vehicle, comprising:

(a) a positive electrode comprising:

a collecting electrode; and
an active material layer which is formed on the collecting electrode, contains a positive electrode active material,

wherein thickness of the active material layer is at a range of 20 – 80 µm;
particle diameter of the positive electrode active material is 5 um or less; and
porosity of the active material layer is 50% or more,
wherein the active material layer comprises of a plurality of active material layers having different porosities, and the porosity of the active material layer closer to the collecting electrode is lower than an active material layer further from the collecting electrode;

(b) a negative electrode; and

(c) a non-aqueous electrolytic solution.

40 (new): A rechargeable lithium ion battery which is capable of being used as an energy source for a vehicle, comprising:

(a) a positive electrode comprising:

a collecting electrode; and

an active material layer containing a positive electrode active material, which includes a first active material layer formed on the collecting electrode and a second active material layer formed on the first active material layer, wherein the first and second active material layers each have a thickness within a range of 20 μm to 30 μm ,

a porosity of the first active material layer is 30% or more and less than 50%,

a porosity of the second active material layer is within a range of 50% to 60%, and

a particle diameter of the positive electrode active material is 5 am or less;

(b) a negative electrode; and

(c) a non-aqueous electrolytic solution.

41 (new): A rechargeable lithium ion battery which is capable of being used as an energy source for a vehicle, comprising:

(a) a positive electrode comprising:

a collecting electrode; and

and active material layer including a first active material layer formed on the collecting electrode and a second active material layer formed on the first active material layer, each of which has a thickness within a range of 20 to 30 μm inclusively, wherein the first active material layer contains a positive electrode active material having a particle diameter of 0.1 μm or more and less than 5 μm , and

the second active material layer contains a positive electrode active material having a particle diameter within a range of 5 μm to 20 μm ;

(b) a negative electrode; and

(c) a non-aqueous electrolytic solution.